Honeywell

C7027A, C7035A, C7044A, C7927A Minipeeper® Ultraviolet Flame Detectors

C7027A   C7035A

C7044A   C7927A

APPLICATION

The C7027A, C7035A, C7044A and C7927A Minipeeper® Ultraviolet Flame Detectors detect the ultraviolet radiation emitted by combustion flames. The flame detectors are used with Honeywell flame safeguard controls to provide flame supervision for gas, oil, or combination gas-oil burners.

FEATURES

- C7027A, C7035A, and C7044A Flame Detectors are used with RA890G devices or R7249A, R7290A, R7749B and R7849A,B Amplifiers and the appropriate Honeywell controls.

- C7927A is used with only the R7851B Flame Amplifier and the 7800 SERIES controls.

- C7044A may also be used with the following 50 Hz Honeywell combustion controls/amplifiers:
  — R4341/R7323
  — R4343/R7323
  — R4344/R7323

- C7027A/C7927A has an integral collar threaded (internal 1/2-14 NPSM) for mounting on a one-half-inch sight pipe.

- C7035A has an integral collar threaded (internal 1-11-1/2 NPSM) for mounting on a one-inch sight pipe.

- C7035A housing meets Underwriters Laboratories Inc. requirements for rain tightness and complies with NEMA enclosure standards, types 4 and 4X.

- C7044A mounts with a two screw bracket. The UV sensor tube is enclosed in a stainless steel housing.

- C7044A has the capability of side or end viewing in flame monitoring applications.

- Because of its compact size, the C7044A is particularly suitable for blast tube mounting.

- Properly installed, the C7027A, C7035A and C7927 are pressure rated for 5 psi.

- C7035A ultraviolet radiation sensor tube is field replaceable.

- Two C7027A, C7035A or C7044A Flame Detectors can be wired in parallel for difficult flame sighting installations. (C7927cannot be used in parallel.)

- C7927A, C7027A1049, C7027A1064, C7027A1072 come with 1/2-in. spud connection for electrical wiring.
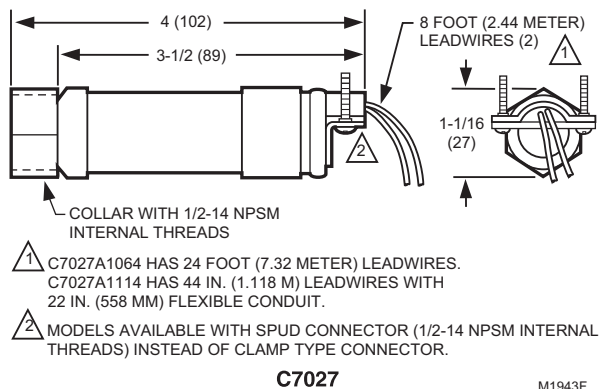
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SPECIFICATIONS

Fig. 1. Installation dimensions of C7027A in in. (mm).

C7027A Minipeeper® Ultraviolet Flame Detector:

Ambient Operating Temperature Ratings: 0°F to 215°F (-18°C to 102°C), or -40°F to 215°F (-40°C to +102°C), depending on model.

Maximum Pressure Rating: 5 psi (34.5 kPa).

Mounting: Collar with 1/2-14 NPSM internal threads for mounting on a 1/2 in. sight pipe.

Wiring Connections: Two 8 ft (2.44 m), color-coded, Plastic-insulated, 18 AWG, NEC Class 1 leadwires, rated for 221°F (105°C). (C7027A1064 has 24 ft [7.32 m] leadwires.) Rear of detector has a clamp type connector for 1/2 in. flexible metallic conduit. (Models are available with 1/2 in. internally threaded spud connector instead of the clamp). C7027A1114 has 44 in. (1.118 m) leadwires and 22 in. (558 mm) flexible conduit.

Dimensions: See Fig. 1.

Replacement Part: 129685 Flange Gasket.

NOTE: The ultraviolet radiation sensing tube is not field replaceable.

Accessory:
136733 Heat Block, laminated plastic, insulating the flame detector from sight pipe temperatures up to 266°F (130°C), 1/2-14 NPSM external threads on one end and 1/2-14 NPSM internal threads on the other end (see Fig. 7). Included with C7027A1080.
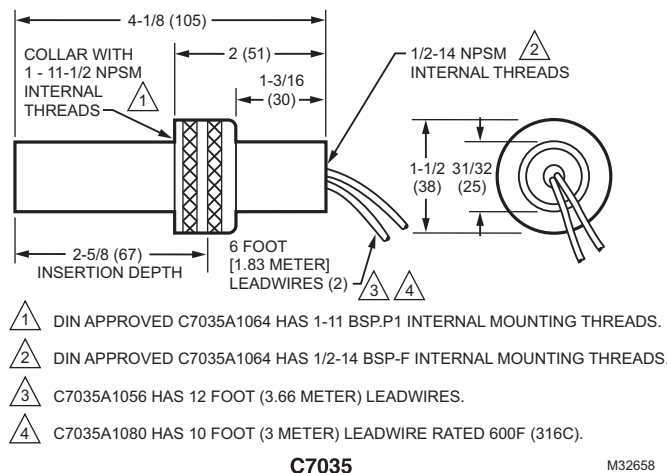390427B Bushing, for mounting to 3/8 in. sight pipe. Included with C7027A1080.

Fig. 2. Installation dimensions of C7035A in in. (mm).

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:
1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
   1885 Douglas Drive North
   Minneapolis, Minnesota 55422-4386
3. http://customer.honeywell.com or http://customer.honeywell.ca

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.
International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

C7035A Minipeeper® Ultraviolet Flame Detector:

Flame Detection: End viewing.

Ambient Operating Temperature Ratings: 0°F to 250°F (-18°C to +121°C), or -40°F to 250°F (-40°C to +121°C), depending on model.

Maximum Pressure Rating: 5 psi (34.5 kPa).

Mounting: Collar with 1-11-1/2 NPSM internal threads for mounting on a 1 in. sight pipe. (The DIN approved C7035A1064 has 1-11 BSP.P1 threads.)

Wiring Connections: Two 6 ft. (1.83 m), color-coded Silicon Rubber Insulated 18 AWG, NEC Class 1 leadwires rated for 302°F (150°C).
The rear of the detector has 1/2-14 NPSM internal threads for connecting to a conduit. The DIN-approved C7035A1064 has 1/2-14 BSP-F threads.
C7035A1056 has 12 ft (3.66 m) leadwires.
C7035A1080 has 10 foot (3 Meter) leadwire rated for 600°F (316°C).

Dimensions: See Fig. 2.

Replacement Parts:
129808 Flange Gasket.
129464M Ultraviolet Sensing Tube, 0°F to 250°F (-18°C to +121°C).
129464N Ultraviolet Sensing Tube, -40°F to +250°F (-40°C to 121°C).

C7027A, C7035A AND C7044:
Approvals:
Underwriters Laboratories Inc. listed: File No. MP268.
Canadian Standards Association certified:
    Master Report LR 95329-1.
Factory Mutual approved.
Swiss Re (formerly Industrial Risk Insurers) acceptable.
DIN approved models: C7027A1056, C7035A1049, C7035A1064.

General Accessories:
118367A Swivel Mount; provides adjustable positioning of the C7027A or C7035A.
204342 Ultraviolet mirror, 3/4 in. NPT.
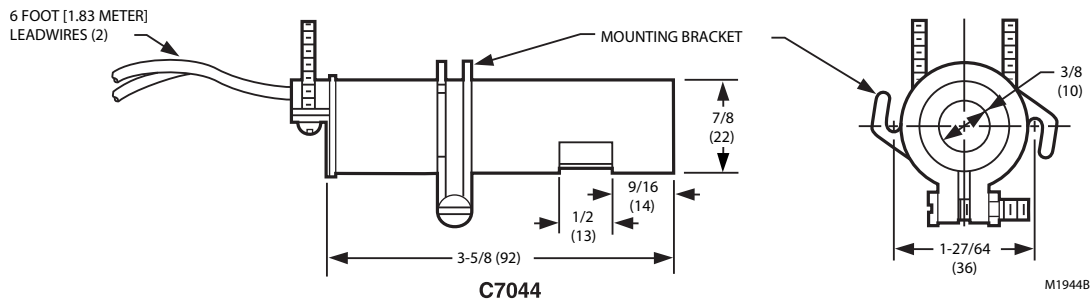105172C Seal off adapter, 3/4 in. NPT.

Fig. 3. Installation dimensions of C7044A in in. (mm).

C7044A Minipeeper® Ultraviolet Flame Detector:

Flame Detection: Housing has two openings to permit either side or end viewing. Side viewing is 1/8 as sensitive as end viewing.

Mounting: Bracket (included in 4074BVK Bag Assembly), secured by two 8-32 RHIS (European M-4) screws (not included).

Wiring Connections: Two 8 ft. (2.44 m) color-coded, plastic coated 18 AWG, NEC Class 1 leadwires. Rear of detector has a clamp type connector for 1/2 in. flexible metallic conduit.

Dimensions: See Fig. 3.

C7927A Minipeeper® Ultraviolet Flame Detector:

Ambient Operating Temperature Ratings:
C7927A1016: -40°F to +200°F (-40°C to +93°C).

Storage Temperature Rating: -20°F to +120°F (-28°C to +49°C).

Maximum Pressure Rating: 5 psi (34.5 kPa).

Mounting: Collar with 1/2-14 NPSM internal threads for mounting on a 1/2 in. (13mm) sight pipe.

Wiring Connections: Two 8 ft. (2.4 m) color-coded, plastic coated 18 AWG, NEC Class 1 leadwires. Rear of detector has a 1/2-in. spud-type connector.

Dimensions: See Fig. 4.

Approvals:
Underwriters Laboratories Inc. (cUL), MP268, Volume 30 and 31.
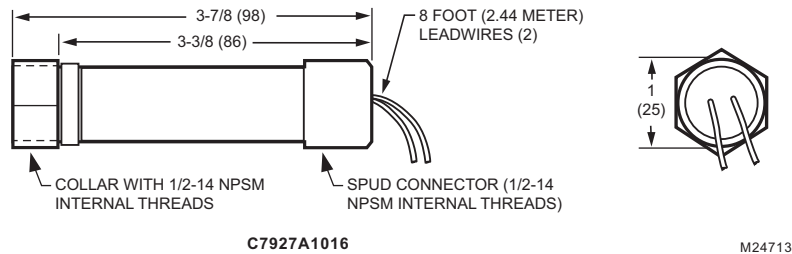Factory Mutual (FM) Approved, report number 3011020, June 26, 2002.

C7927A1016

M24713

Fig. 4. Installation dimensions of C7927A1016 in in. (mm).

INSTALLATION

When Installing This Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced, flame safeguard control technician.
4. After installation is complete, check out product operation as provided in these instructions.

Disconnect power supply before beginning installation to prevent electrical shock and equipment damage. All wiring must comply with applicable electrical codes, ordinances and regulations. Use NEC Class 1 wiring.

IMPORTANT

The C7027, C7035, and C7044 ultraviolet radiation sensing tubes have a life expectancy of 40,000 hours of continuous use within the flame detector's specified ambient temperature and voltage ratings. When an ultraviolet radiation sensing tube wears out, the UV sensor will fail to properly discriminate between flame conditions.

The C7027A, C7035A, C7044A and C7927 Flame Detectors should only be used on burners that cycle on/off or, in the absence of cycling, are periodically checked for proper operation following the application instructions provided by the equipment manufacturer.

Recommended industry standards for the frequency of sensor checks, either through cycling (employing safe-start check methods) or periodic maintenance. If uncertain, industry guidelines suggest one burner cycle in a 24-hour period.

Consult the equipment manufacturer or the governing standard for recommendations about frequency of checks.

Controls incorporating safe-start checks, and sensors and controls employing constant check means are available from Honeywell. See your Honeywell representative for specific information.